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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,171	11/15/2001	Jackson C. Koo	IL-10814	2630

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EXAMINER

LARKIN, DANIEL SEAN

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,171

Applicant(s)

KOO et al.

Examiner

Daniel Larkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 Jul 2001 is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “pair of annular members (12', 22) mounted in the first annular member (11') using a sealant”, as recited in claims 5 and 13 in combination with all of the remaining limitations of the base claim and any intervening claims must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. Applicants are required to submit a proposed drawing correction or corrected drawings in response to this Office Action to avoid abandonment of the application. Any proposal by the Applicants for amendment of the drawings to cure defects must consist of two parts:
 - a) A *separate* letter to the Draftsman in accordance with MPEP § 608.02(r); and
 - b) A print or pen-and-ink sketch showing changes in *red ink* in accordance with MPEP § 608.02(v).

IMPORTANT NOTE: The filing of new drawings to correct the noted defect may be deferred until the application is allowed by the Examiner, but the print or pen-and-ink sketch with proposed corrections shown in red ink is required in response to this Office Action, and *may not be deferred*. The objection to the drawings will not be held in abeyance.

3. The disclosure is objected to because of the following informalities:

✓ Page 1, text line 8: The phrase -- now U.S. Patent No. 6,457,347, -- should be inserted after the date “December 15, 1999”.

✓ Page 1, text line 16: The phrase -- now U.S. Patent No. 6,457,347, -- should be inserted after the application serial number.

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- ✓ Page 2, text line 11: The term “in” should be corrected to read -- on --.
 - ✓ Page 2, text line 21: The term “limitation” should be plural.
 - ✓ Page 3, text line 21: The article -- a -- should be inserted prior to the term “cathode”; and the article -- an -- should be inserted prior to the term “anode”.
 - ✓ Page 4, text line 7: The phrase -- now U.S. Patent No. 6,457,347, -- should be inserted after the application serial number.
 - ✓ Page 5, text line 4 14, 17, and 23: The phrase -- now U.S. Patent No. 6,457,347, -- should be inserted after the application serial number.
 - ✓ Page 5, text line 17: The term “detect” should be corrected to read -- detector --.
 - ✓ Page 9, text line 2: The term “logrimatic” should be corrected to read -- logarithmically --.
 - ✓ Page 11, text line 10: The phrase -- now U.S. Patent No. 6,457,347, -- should be inserted after the application serial number.
 - ✓ Page 12, text line 3: The term “passing” should be corrected to read -- pass --.
 - ✓ Page 12, text line 6: The article -- the -- should be inserted prior to the term “sample”.
 - ✓ Page 12, text line 21: The numeral designation “13¹” should be corrected to read -- 13' --.
 - ✓ Page 12, text line 23: The term “Molybdenum” should be corrected to read -- molybdenum --.
 - ✓ Page 12, text line 24: The term “Uranium” should be corrected to read -- uranium --.
- Appropriate correction is required.

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4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Forming all members of the glow discharge detector from tungsten, as recited in claim 4.

Providing a "Langmuir-like probe", as recited in claims 11 and 13.

5. Claims 8-17 are objected to because of the following informalities:

✓ Re claim 8, claim line 2: The term "[pair]" should be deleted. It would appear that Applicants have inadvertently provided a marked copy of this claim.

✓ Re claim 9, claim line 2: The term "[said]" should be deleted.

✓ Re claim 11, claim line 4: The first occurrence of the term "including" should be deleted.

✓ Re claim 13, claim line 9: The term "be" should be corrected to read -- being --.

✓ Re claim 13, claim line 13: The term "tubed" should be corrected to read -- tubes --.

✓ Re claim 17, claim line 3: The terms "Molybdenum" and "Uranium" should be corrected to read -- molybdenum -- and -- uranium --, respectively.

✓ Re claim 17, claim line 4: The "parenthesis" around the term "poisoned" should be deleted. One could think that the term poisoned may be used for example purposes only rather than a structural limitation. Appropriate correction is required.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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7. Claims 4-7 and 11-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The disclosure fails to provide an adequate written description for making all members of the glow discharge detector from tungsten. The disclosure, page 11, text line 12, discloses that the member with the tapered end/pin (16) is composed of tungsten. The disclosure also recites, page 12, text lines 17, 18, 22, and 23, that the solid member/rod (13') and one annular member/tube (22), as shown in Figure 3, may be composed of tungsten. The disclosure only recites that the other annular member (12), used to support the tapered member (16), is composed of stainless steel, page 11, text lines 11 and 13. Additionally, the disclosure only recites glass as the material composition for the first/outer annular member (11), page 11, text lines 10, 11, and 15. Therefore, in view of the disclosed embodiments, all of the members (11, 11', 12, 12', 13, 13', 16, and 22) are not composed of tungsten, contrary to what is suggested by the claim.

The disclosure fails to provide an adequate written description for sealing the pair of annular members (12', 22) within the first annular member (11') with sealant, as recited in claims 5, 6, and 11. The discussion of the embodiment of Figure 1 discloses the use of sealant (14, 15) to seal the pair of annular members (12, 13) within the first annular member (11). In the first embodiment, the pair of members appear to float within the first member (11), so sealant (14, 15) would appear necessary to prevent movement of the pair of members (12, 13) within the first

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member (11). The second embodiment, as shown in Figure 3, however, uses a pair of members (12', 22) which appear to have a large surface area in contact with the interior wall of the first annular member (11'). The discussion of Figure 3, as well as the drawing figures, provides no mention of sealant for fixing the pair of members (12', 22) to the first member (11').

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the Applicants regards as their invention.

9. Claims 4-7 and 11-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 4, claim line 1: Which of "said members" is being recited in the claim?

Re claim 4, claim lines 1 and 2: How can said members be composed of tungsten when claim two has previously established that the "first annular member" comprises glass; and claim three establishes that the "pair of annular members" comprise stainless steel tubes?

Re claim 7, claim line 2: The phrase "closely adjacent" is deemed to be a relative phrase, and therefore, indefinite because the phrase "closely adjacent" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. .

Re claim 11, claim line 4: The term "Langmuin-like probe" is deemed to be indefinite because one is unclear as to what types of probes are considered Langmuin-like and which types of probes are not.

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Re claim 11, claim lines 4 and 5: The phrase “large variations” is deemed to be a relative phrase, and therefore, indefinite because the phrase “large variations” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Re claim 11, claim lines 5 and 6: The phrase “the carrier gas” lacks antecedent basis.

Re claim 13, claim line 8: The term “Langmuir-like probe” is deemed to be indefinite.

Re claim 13, claim line 10: The phrase “closely adjacent” is deemed to be a relative phrase, and therefore, indefinite because the phrase “closely adjacent” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Re claim 17, claim line 2: The term “preferably” is deemed to be indefinite because one is unclear whether the limitations following the term are part of the claimed invention. Additionally, one is unsure when refractory metals are to be used and when they are not.

Re claim 17, claim lines 2 and 3: The phrase “low work functions” is deemed to be indefinite because the phrase is a relative phrase. The phrase “low work functions” is not defined by the claim, and the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

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Re claim 17, claim line 3: The phrase “such as” renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Re claim 17, claim line 3: The term “etc.” renders the claim indefinite because the claim includes elements not actually disclosed (those encompassed by “etc.”), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Re claim 17, claim line 3: The phrase “normal metals” is a relative phrase which renders the claim indefinite. The phrase “normal metals” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Re claim 17, claim line 3: The term “like” is deemed to be indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-15 and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by “Glow Discharge Detector” (Koo et al.).

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With respect to the limitations of claims 1-4, 11, 13, the reference to Koo et al., page 3, lines 3 and 4 from bottom, discloses a hand-held glow discharge detector having a first annular member formed from glass; a pair of annular stainless steel tubes acting as an anode and cathode aligned within the glass tube; a first member having a tapered end formed from tungsten mounted in a first one of the pair of annular members; and a second member formed from a tungsten pin/solid member mounted in a second one of the pair of annular members.

With respect to the limitations of claims 8-10 12, reference to Figure 1 shows a power supply, a capacitor, and a plurality of resistors. The capacitor is connected intermediate a pair of resistors. Additionally, the resistors provided have differing resistances.

With respect to the limitations of claim 14, the reference states, page 3, text lines 25-27, that the stainless annular tubes are pinched to lock the tungsten pins within the tubes.

With respect to the limitations of claims 5, 6, and 15, the reference states, page 3, text lines 27-30, that the two annular stainless steel tubes are aligned within the outer glass tube and sealed within the outer tube with epoxy.

With respect to the limitation of claim 7, the reference states that the tapered member is a pin, thus having a point, and is located adjacent to the second pin/solid member.

With respect to the limitations of claim 17, the reference states, page 3, lines 3 and 4 from bottom, that the first pin and the second pin/solid member are formed from tungsten.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over "Glow Discharge Detector" (Koo et al.).

The reference to Koo et al., page 3, lines 3 and 4 from bottom, discloses a hand-held glow discharge detector having a first annular member formed from glass; a pair of annular stainless steel tubes acting as an anode and cathode aligned within the glass tube; a first member having a tapered end formed from tungsten mounted in a first one of the pair of annular members; and a second member formed from a tungsten pin/solid member mounted in a second one of the pair of annular members. As shown in Figure ²~~1~~, the reference to Koo et al. shows that the pair of stainless steel annular tubes are partially located within the interior of the outer glass tube. The reference, however, fails to disclose/show the embodiment having a two tungsten pins located within the two annular stainless steel tubes. The Examiner argues that the new embodiment would function in a like manner as the embodiment shown in Figure ²~~1~~ of Koo et al.; or alternatively, one of ordinary skill in the art would have the required ability to manufacture and use a glow discharge detector having partially located annular stainless steel tubes within an outer glass tube.

14. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

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The reference to US 6,012,326 (Raybone et al.) discloses a detector for detecting the presence of volatile substances in a gaseous medium by detecting changes in a parameter of a plasma which is generated in the detector between two electrodes.

The reference US 5,955,886 (Cohen et al.) discloses a microliter-sized ionization device for detecting the presence of small quantities of trace analytes.

The reference to US 3,478,205 (Sporek) discloses an ionization detector electrode assembly and method of analyzing gas and vapor substances.

The reference to US 3,656,339 (Narain) discloses a direct current glow discharge detector which is utilized as the gas detector for a gas chromatograph.

The article to Dai et al. discloses a micro GC detector formed from a first tapered electrode and a second tubular electrode.

15. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel Larkin whose telephone number is (703) 308-6724. The Examiner can normally be reached on Monday-Friday from 7:00 AM - 4:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Hezron E. Williams, can be reached on (703) 305-4705. The FAX telephone number for this Technology Center (TC 2800, unit 2856) is (703) 308-7382.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Daniel Larkin

15 October 2002


DANIEL S. LARKIN
PRIMARY EXAMINER